

REMARKS**Amendment to the Claims**

Claims 1, 4-6, 9-14, 17, 25-29 and 31-33 were under examination as of the issuance of the Office Action of April 2, 2004. Claims 1, 4, 10-12, 25-29 and 31-33 are allowed. Claims 5, 6, 9, 13, 14 and 17 stand rejected. In the Amendment to the Claims spanning pages 2 to 5 of this paper, claims 5, 12 and 17 are currently amended, without prejudice, and claim 39 is added. Upon entry of this amendment, claims 1, 4-6, 9-14, 17, 25-29, 31-33 and 39 will be pending. No new matter has been added by this amendment.

Claim 5 is amended to read on an isolated nucleic acid molecule which hybridizes to the complement of a nucleic acid molecule consisting of SEQ ID NO:1. Support for amended claim 5 can be found throughout the specification, for example, at page 25, lines 3-9. Claim 12 has been amended to recite that the host cell is transformed. Support for this amendment can be found throughout the specification, for example, on page 34, lines 22-27 and from page 38, line 27 to page 39, line 2. Claim 17 is amended to recite that the polypeptide is encoded by an expression vector comprising a nucleic acid molecule of the invention. Support for this amendment can be found throughout the specification, for example, on page 6, lines 5-9.

Dependent claim 39 has been added to cover particular embodiments of the invention. Support for this additional claim can be found throughout the specification, for example, at page 5, lines 2-6.

No new matter has been added by these claim amendments or by introduction of the new dependent claim. Applicants reserve the right to pursue the claims as originally filed in one or more further applications.

Allowed Claims

Applicants gratefully acknowledge the Examiner's indication that claims 1, 4, 10-12, 25-29 and 31-33 are allowed.

Priority

Applicants acknowledge that the instant claims are granted the priority date of June 23, 2000, the filing date of the instant application. Additionally, Applicants note that certified copies of the foreign German patent applications will be filed upon issuance of a patent, upon which Applicants request grant of foreign priority.

Rejection of Claims 5 and 9 Under 35 U.S.C. § 112, Second Paragraph

In the Office Action, claims 5 and 9 are rejected under 35 U.S.C. § 112, second paragraph as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. According to the rejection, the phrase “naturally occurring” is unclear as to its metes and bounds. In order to expedite examination and in accordance with the Examiner’s suggestion, and in no way conceding to the validity of the Examiner’s assertion, Applicants have amended claim 5 to remove the recitation of “naturally occurring”. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 5 and 9 under 35 U.S.C. § 112, second paragraph.

Rejection of Claims 13-14 Under 35 U.S.C. § 112, Second Paragraph

In the Office Action, claims 13-14 are rejected under 35 U.S.C. § 112, second paragraph as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. According to the rejection, since claim 12 is drawn to transfected host cells, it is unclear how microorganisms, which are transformed, appropriately limit the subject matter of the parent claim. In order to expedite examination and in accordance with Examiner’s suggestion, the Applicants have amended claim 12, without prejudice, to recite “transformed” host cells. Applicants believe that such amendment to claim 12 renders claims 13 and 14 allowable. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 13-14 under 35 U.S.C. § 112, second paragraph.

Rejection of Claim 17 Under 35 U.S.C. § 112, Second Paragraph

Furthermore, claim 17 is rejected under 35 U.S.C. § 112, second paragraph as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. According to the rejection, it is unclear as to whether the produced polypeptide is that which is encoded by the expression vector. In order to expedite examination and in no way conceding to the validity of the Examiner's assertion, the Applicants have amended claim 17, without prejudice, to recite "A method of producing a polypeptide encoded by an expression vector comprising the nucleic acid molecule of any one of claims 1 and 4-6...". Applicants believe that such amendment renders claim 17 clear and allowable, in that the amended claim specifies that the polypeptide is encoded by the particular expression vector. Applicants respectfully request reconsideration and withdrawal of the rejection of claim 17 under 35 U.S.C. § 112, second paragraph.

Rejection of Claims 5 and 9 Under 35 U.S.C. § 112, First Paragraph

The Office Action further rejects claims 5 and 9 under 35 U.S.C. § 112, first paragraph as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art, that the inventors were in possession of the invention at the time the application was filed. Specifically, the Examiner asserts that the application does not provide sufficient written description for the genus of allelic variants of polypeptides comprising the amino acid sequence of SEQ ID NO:2. In order to expedite examination and in accordance with the Examiner's suggestion, and in no way conceding to the validity of the Examiner's assertion, Applicants have amended claim 5 such that it no longer recites the term "allelic variants". Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 5 and 9 under 35 U.S.C. § 112, first paragraph.

Rejection of Claims 5, 6 and 9 Under 35 U.S.C. § 112, First Paragraph

Finally, the Office Action rejects claims 5, 6 and 9 under 35 U.S.C. § 112, first paragraph. According to the rejection, the specification fails to provide enablement for

polynucleotides with 90% sequence identity to the nucleotide sequence of SEQ ID NO:1. Applicants respectfully disagree.

Initially, Applicants note that in the Office Action of April 22, 2002 (Paper No. 11), the Examiner rejected claim 6, which at the time was directed to polynucleotides with 50% sequence identity to the nucleotide sequence of SEQ ID NO:1, for lack of enablement. Examiner stated, "Claims 6-8 and 34 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for polynucleotides with at least, for example, 90% sequence identity to a polynucleotide which encodes SEQ ID NO:1, does not reasonably provide enablement for polynucleotides with such low sequence identity, such as the 50% identity claimed..." After Applicants amended claim 6 in the Amendment and Response to Office Action filed October 22, 2002 in reliance on Examiner's acknowledgment of enablement for 90% sequence identity, the Examiner withdrew the rejection in the Office Action of January 14, 2003 (Paper No. 15). Applicants are in agreement with the previous position on the record regarding enablement of the claimed subject matter, *i.e.*, sequences having 90% identity to the reference sequence and further having the recited function.

Applicants further assert that the teachings of SEQ ID NOs. 1 and 2 in the present disclosure, in combination with the state of the art at the time of the filing of the present application, provided sufficient enablement for one skilled in the art to make a polynucleotide of 90% identity to that of SEQ ID NO:1 that encodes for a functional 6-phosphogluconolactonase. Applicants note that the publication of the sequences of homologous proteins and nucleotide sequences at the time of the filing of the present application allowed for one skilled in the art to determine critical conserved residues of 6-phosphogluconolactonase, without undue experimentation. Applicants direct the Examiner to GenBank Accession Nos. CAB66415 (AL132956), CAB57866 (AJ243972), and AAD22666 (AF029673), which provide amino acid sequences (and nucleotide sequences) for 6-phosphogluconolactonase in *Arabidopsis thaliana*, humans and *Pseudomonas aeruginosa*, respectively. Each of these sequences was published prior to the filing of the present application. Based on Applicants' identification of the instant *Corynebacterium glutamicum* gene and its function, the critical domains for 6-

phosphogluconolactonase activity may have been determined by one skilled in the art, without undue experimentation. Indeed, one skilled in the art may have determined the conserved domains among the known sequences by simple BLAST techniques well known in the art. Accordingly, the state of the art along with the teachings of the present invention provide sufficient enablement for one skilled in the art to make a nucleic acid molecule encoding a functional 6-phosphogluconolactonase protein in accordance with the limitations of claim 6.

Additionally, in order to expedite examination and in no way conceding to the validity of the Examiner's assertion, Applicants have amended claim 5 to remove the recitation of "allelic variants". Applicants believe that claim 5, as amended, is properly enabled by the teachings of the present invention, alone, or in combination with the state of the art at the time of filing of the present application.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 5, 6 and 9 under 35 U.S.C. § 112, first paragraph.

CONCLUSION

In view of the foregoing remarks, reconsideration of the rejections and allowance of all pending claims is respectfully requested. If there are any remaining issues or if the Examiner believes that a telephone conversation with Applicants' Attorney would be helpful in expediting prosecution of this application, the Examiner is invited to call the undersigned at (617) 227-7400.

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Respectfully submitted,

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